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(12) **EUROPEAN PATENT APPLICATION**

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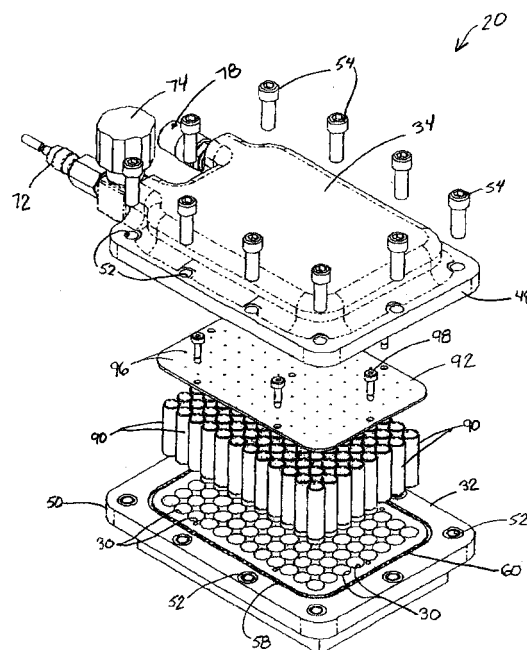
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(54) **High pressure parallel reactor**

(57) An apparatus for use in parallel reaction of materials. The apparatus includes a base (32) having a plurality of reaction wells, each of the reaction wells (30) having a closed lower end (84) and open upper end for receiving reactant materials. A cover (34) is configured for sealing engagement with the base to form a housing enclosing the plurality of reaction wells and defining a common pressure chamber (26) in communication with the reaction wells.

The apparatus further includes a flow restriction device (92) positioned adjacent to the open ends of the reaction wells to provide communication between the reaction wells and the pressure chamber while reducing cross-talk between the reactants and an inlet port (70) in communication with the pressure chamber for supplying pressurized fluid to the chamber to pressurize the reaction wells. The housing is configured to sustain a pressure substantially above atmospheric pressure.



**FIG. 1**

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# EUROPEAN SEARCH REPORT

Application Number  
EP 01 11 7143

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
P,X	WO 01 05497 A (GEN ELECTRIC) 25 January 2001 (2001-01-25)  * abstract * * page 11, line 4 - line 18; figures 1-5 * * page 14, line 15 - page 15, line 10 * ---	1,3,8, 10-12, 15,18, 25,26	B01J19/00 G01N35/02
X	WO 00 03805 A (COHEN JOE ;COMBICHEM INC (US); GUBERNATOR KLAUS M (US); ZAMBIAS RO) 27 January 2000 (2000-01-27) * page 2, line 17 - line 30 * * page 3, line 5 - line 36 * * page 5, line 31 - page 6, line 18 * * page 7, line 7 - page 8, line 37 * * page 10, line 30 - page 11, line 5 * ---	1-8,10, 12-19	
X	WO 97 45443 A (ALANEX CORP) 4 December 1997 (1997-12-04)  * page 3, line 15 - line 16 * * page 7, line 25 - line 34 * * page 13, line 17 - line 27 * ---	1-3,5,6, 8,10-15, 17-19	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
X	US 5 716 584 A (BAKER WILLIAM R ET AL) 10 February 1998 (1998-02-10)  * column 1, line 55 - column 2, line 27; figures 1A,1B,3A,4 * * column 4, line 38 - line 63 * ---	1-3,5,6, 8,10, 12-15, 17-19	B01J G01N
A	US 6 063 633 A (WILLSON III RICHARD C) 16 May 2000 (2000-05-16) * abstract * * column 3, line 24 - line 42; claims 1,3,30; figure 11 * -----	1-19,25, 26	
<del>The present search report has been drawn up for all claims</del>			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>5 November 2001</b>	Examiner <b>Veefkind, V</b>
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document	

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### CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

### LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☒ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

1-19; 25, 26



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**LACK OF UNITY OF INVENTION  
SHEET B**

Application Number  
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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

**1. Claims: 1-19; 25,26**

Independent claim 1, relating to an apparatus for use in parallel reaction of materials comprising, inter alia, a base having a plurality of reaction wells, and dependent claims 2-19.

Independent claim 25, relating to a method for reacting a plurality of materials in parallel.

**2. Claims: 20-24**

Independent claim 20, relating to an apparatus for use in parallel synthesis of materials comprising, inter alia, a pressure chamber sized for receiving a microtiter plate, dependent claims 21-24.

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 01 11 7143

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
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05-11-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 0105497 A	25-01-2001	AU 6215800 A WO 0105497 A1	05-02-2001 25-01-2001
WO 0003805 A	27-01-2000	AU 4985699 A EP 1098708 A1 WO 0003805 A1	07-02-2000 16-05-2001 27-01-2000
WO 9745443 A	04-12-1997	AU 2939497 A WO 9745443 A2	05-01-1998 04-12-1997
US 5716584 A	10-02-1998	AU 6916396 A CA 2231170 A1 EP 0848721 A1 JP 11502720 T WO 9709353 A1	27-03-1997 13-03-1997 24-06-1998 09-03-1999 13-03-1997
US 6063633 A	16-05-2000	AU 1967997 A CA 2247259 A1 CN 1226966 A EP 0883806 A1 JP 2000506265 T WO 9732208 A1 US 6333196 B1	16-09-1997 04-09-1997 25-08-1999 16-12-1998 23-05-2000 04-09-1997 25-12-2001